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The Massachusetts Trustees of Public Reservations.

THE work of the Trustees of Public Reservations in Massachusetts continues to maintain the important and interesting character that has distinguished it from the start, six years ago. This public-spirited corporation furnishes a striking instance of what can be accomplished by furnishing a nucleus for the aspirations and the efforts of those who have at heart any special line of action for the common good. In such work the greatest factor, perhaps, is the obtaining of an adequate leverage from which things can be moved. The Trustees of Public Reservations have supplied such a leverage for the lovers of "beautiful and historic places," to quote the happy phrase with which the late Charles Eliot expressed the aim of the movement at its inception. The corporation has done little more than furnish this leverage; the friends of its work have done the rest.

The Massachusetts trustees are the pioneer body in their peculiar line of activity, and their example has been successfully followed in other parts of the world. For instance, when the work of the Massachusetts corporation became known in England, it was felt that this was just the sort of instrumentality for the accomplishment of a much-needed work there, and the result was the organization of an influential society with similar aims, called the National Trust for Places of Historic Interest or Natural Beauty. On this side of the ocean the Appalachian Mountain Club, of Boston, has been endowed by legislative enactment with similar functions; the desirability of action for the preservation of notable features of mountain scenery in New Hampshire led to this step, and the club, therefore, as a rule, pursues its activities in this line outside of Massachusetts, where the work of the Trustees of Public Reservations amply covers the ground. In other parts of this country organizations have been formed on lines similar to those of the Massachusetts corporation, and good results are reported from them.

The work of the Trustees of Public Reservations in Massachusetts has been of two kinds—suggestive and administrative. Although composed chiefly of persons of means and influence, the corporation has no large funds directly at command. But when work of an incentive character has seemed desirable the necessary means have been forthcoming, and the supplying of needed funds has been an essential preliminary for the undertaking of any special piece of administrative work. Its work of incentive, or for purposes of public information, has been particularly desirable. Of this kind were the notable investigations concerning the public open spaces in the shore towns of Massachusetts which the trustees caused Mr. J. B. Harrison to make, the results of which were first made public in the pages of GARDEN AND FOREST; also the full and accurate statistics concerning public open spaces in the cities and towns of Massachusetts contained in the second annual report of the trustees; and finally, the report on the open spaces in the shore towns made by Mr. H. B. Hastings, supplementary to the work of Mr. Harrison, given in the third annual report.

It is largely due to the incentive of this corporation that the legislation was obtained instituting the Boston Metropolitan Park Commission, whose work is transforming the country about the New England metropolis into scenes of remarkable and enduring beauty. And when the vexed question of the Province lands at the extreme end of Cape Cod came up for consideration the Trustees of Public Reservations were selected by the Massachusetts Legislature to investigate and report upon the subject. In consequence, after a controversy of nearly two centuries, the residents of the greater part of Provincetown were for the first time given full title to their holdings and a scientific policy was adopted for the administration of the many hundreds of acres of state lands there, including the reforesting of the great sand-dunes that were threatening the town and the harbor with ruin.

Invaluable information has been given by the investigation, under the auspices of the trustees, of the public's rights upon the seashore. There are other lines of investigation which might profitably be entered upon, such, for example, as the rights of the public in small streams and in ponds; any young student interested in these lines of research might do real public service by bringing to light the various curious and instructive provisions concerning such matters contained in the old colonial and provincial laws. The Trustees of Public Reservations would doubtless supply the medium of expression for any investigations along these lines.

For a while it seemed as if there would be little administrative work for the trustees. But, as time has passed, various opportunities for usefulness in this direction have presented themselves, and it is probable that before long the holdings of the corporation will be scattered throughout the commonwealth. The procedure in these matters is simple, and entails but slight burden upon the standing committee of the trustees, upon which rest the active functions of the corporation. When investigation shows the desirability of preserving any beautiful or historic spot in any portion of the commonwealth the trustees assume the charge thereof on condition that the funds necessary to maintenance be provided. Thereupon regulations for the proper use of the place are adopted and its care is given into suitable local hands. Virginia Wood in Stoneham was the first gift to the public placed in charge of the trustees. This has become an integral part of the great metropolitan reservation of Middlesex Fells, and therefore requires but little direct oversight from the trustees. A bronze tablet, inscribed with the facts concerning the gift, has been affixed to a ledge in the woods. Goodwill Park, in Falmouth, was given into the hands of the trustees for the benefit of the people of that town by Mr. Joseph Story Fay, and it has been placed in immediate charge of a local committee.

This year a particularly charming piece of property has been given into the keeping of the trustees by Mr. Augustus Hemenway, of the Metropolitan Park Commission, who takes an active interest in the preservation of beautiful scenery. A feature of Charles River landscape, second in picturesqueness only to Hemlock Gorge, will thus be

preserved for all time. Between the townships of Medfield and Sherborn there is a place where the narrow stream flows between a bank of woods and a high Hemlock knoll; behind this knoll lies a sunny meadow, bordered by more high woods. "Locally," says the recent report of the trustees, "the little gorge is known as Rocky Narrows, and the little meadow as the Dingle Hole; but many canoe men from the neighborhood of Boston know the place as the Gate of the Charles." The eastern bank of the river at this point is the property of the commonwealth, being a part of the grounds of the State Asylum at Medfield, and the area on the western bank that has been conveyed to the trustees comprises about twenty acres.

The committee notes that much of the most charming and most easily destroyed scenery of Massachusetts is found along the banks of ponds and streams, and it is represented that it would be for public advantage if narrow strips of such waterside lands could be secured by interested and generous citizens and given into the charge of the trustees. "Many such strips are found between country roads and streams or ponds, and many other strips of similarly useless but beautiful land are to be found bordering roads in rocky or steep places. Nothing could more directly help to keep the state a pleasant and beautiful place to live in than such preserving of the local roadside scenery. Such strips, as well as hilltops, ravines, bits of seashore, and any remarkably beautiful spots will always gladly be taken charge of by this Board, provided some little money to form a maintenance fund comes with each gift."

It is remarked that other worthy objects for enthusiastic generosity are places of antiquarian, historic or literary interest; for example, visible traces of Indian villages and earthworks of the Indian wars, and the homes of eminent persons. There are also places of more strictly scientific interest which ought to be permanently preserved; a few remarkable botanical localities, for instance, such as Rhododendron or Holly thickets, and a few places of extraordinary interest to geologists. In the matter of local pleasure-grounds where it may be impracticable to establish regular park commissions—as in the case of Goodwill Park, in Falmouth—the Trustees of Public Reservations form a particularly desirable organization for their care.

The Swamps of South-eastern Missouri.

THE botanist familiar with the sphagnum bogs of the Lake region and the east is sadly disappointed in his first botanizing in the south-west at finding nothing comparable with them. In their place he finds muddy sloughs in the river bottoms, and even more muddy ponds, more or less dried out, representing the site of abandoned brickyards in the clay regions. Now and then, too, the springy margin of an artificial fish pond comes in for exploration. In such places, which at first seem quite unpromising, and the exploration of which is far less pleasant than that of the clean swamps of the north, are found, nevertheless, many plants which affect the eastern bogs; and while Sarracenia and the swamp Ericaceæ are not meet with, they are replaced by plants which form equally desirable additions to the herbarium, though they may not afford equal pleasure in the collecting.

But to the eastern botanist, few localities offer a charm of novelty equal to that afforded by the deep swamps of Missouri and Arkansas, lying in general along the region of Crowley's Ridge. Remnants of the ancient delta of the Mississippi River, these swamps are everywhere traversed by streams, the sluggish flow of which has seemingly more than once changed its directions, while even to-day a flood period like that of last spring causes the backwater of the Mississippi and its larger western tributaries to more or less overcome their limits. This is the land of cotton, and while corn is here king, no inconsiderable amount of good fiber is shipped out each fall and winter.

A little further to the north and west, in the hill country, the short-leaved Yellow Pine (Pinus echinata) is abundant, and one lone tree far down on the lowlands of Dunklin county suggests speculation concerning the earlier range of the species; but the lumber cut here is Cypress (Taxodium), Black Gum (Nyssa sylvatica), Cottonwood (Populus deltoidea), now coming into considerable use for cheap boxes, and the various White Oaks, chiefly for railroad ties. Of the latter, the true White Oak (Quercus alba) is perhaps the most abundant on the higher ground, but in the lowlands the Cow Oak (Q. Michauxii) is abundant, and often of very large size, and—a surprise to one who knows the Post-Oak barrens of the Ozarks—the Post-Oak (Q. minor) is almost equally common. Perhaps nowhere else in the United States is there to-day so large a supply of White Hickory (Hicoria ovata) as in this region; and in the rich damp woods below Delta from one hundred to one hundred and fifty feet represents the prevailing height of this species, the Texan Oak (Q. Texana), Sweet or White Gum (Liquidambar), and their associates. Here, too, Salix nigra, the Water Oak (Quercus nigra), and the Turkey Oak (Q. digitata) reach a great size.

The deep Cypress swamps lying along the streams, however, are the most remarkable in their interest. Except in seasons of great flood, the water of these sunken lands varies little in its general level, and the Cypress knees correspond approximately in height with this level for many miles, rising so close together between the trees that only a native can find passageway between them for a dug-out canoe. In such a canoe, with an experienced guide, barring the discomfort of the tailor's seat which must often be affected, one can pass with pleasure for hours silently between the trees, now startling a great turtle into a quick plunge from its sunning place on an emergent log, or in turn be startled by the quick call and splashing flight of a pair of mallards, and again recoiling as one's elbow almost brushes against a large water snake—a water moccasin, as it is here called—lying afloat on a snag; drinkable the water scarcely is, but it lacks the turbidity of the larger streams, and, stellate with Cabomba and Jussiæa, and often for miles carpeted with a dense layer of beautiful Azolla with intermingled Lemna, Spirodela, Wolffia and Wolffiella, it presents a delightful appearance not soon to be forgotten. But the novice who dips into it, or the botanist whose zeal leads him to gather its choice surface coating with incautious hand, is quite likely to learn that in the latter are certain small hemiptera, whose pungent thrust is no less painful than the sting of a hornet, though happily not so serious or lasting in its effects.

Here the Nelumbium is at home, and in season its great dew-studded leaves, with the curious bronzed lens of their lower surface conspicuous in the slanting light, and charming creamy flowers, form an almost impenetrable jungle in the waterway. But most marvelous of all are the masses of Polygonum, which, rooted perhaps ten or fifteen feet below the surface, finally emerge, making a tangle on which, in hip-boots, one may wade with as great security as on the more solid land.

The trees of the deeper water are chiefly Cypress (Taxodium) and Tupelo (Nyssa aquatica), the greatly dilated bases of which rival anything of the kind that I have ever seen. Not infrequently within the hollow trunk of some old tree may be seen a perfect forest of young knees from its younger neighbors or even from its own roots, providing the aëration which these would otherwise never get in this region of perpetual water. Now and then old Cypress stubs, with gray bark and large branches emerging from the giant trunks close to the water level, stand in marked contrast with the tall, clean stems of a later generation, suggesting the doubtful hypothesis that the strip of land on which they grew has sunken locally below the general level of the stream.

Elsewhere, one finds Amorpha fruticosa and Itea Virginica as terrestrial plants, and indeed they are so found here in places; but out in the channels they are to be seen in numbers, accompanied by Wistaria, Rosa Carolina, and

a host of herbaceous species, rooted on the decaying remains of old tree stumps, or even on the accumulated débris of many generations of Polygonum. At the level of the flood water, marking the point where their drifting seeds lodged, but in summer some inches above the water line, are tangles of Bidens, Cyperus, and other herbs, firmly anchored and vigorously growing in the crevices of the bark of living trees, which still higher are covered with foliaceous Liverworts, Mosses, Colleniaceous Lichens, and not infrequently, great masses of Polypodium incanum.

Where the water is shallower occur the Swamp Maple (Acer rubrum, Drummondii), Planera, the Swamp White Ash (Fraxinus profunda), Catalpa, and Water Locust (Gleditschia aquatica), which, on the gradual intrusion of the low shores or islands, give place to the usual swamp timber, festooned with Supple-Jack (Berchemia), Cross-vine (Bignonia capreolata), Trumpet Creeper (Tecoma radicans), and Grapes. And the beautiful pink clusters of Mikania, and the blue foliage of Cissus stans stand out in rich contrast with the prevalent green. After a first day of this unwonted experience one emerges into the usual noise and bustle with the feeling that he has visited another world quite different from anything he has ever seen, and scarcely knowing which to admire most—the great solitude of the place or the beautiful way in which Nature's hand has adapted her children to a most unusual home.

Missouri Botanic Garden. *Wm. Trelease.*

Sun-scald and Means for its Prevention.

SUN-SCALD, as the term is commonly used in the north-west, is the partial or complete destruction of the bark of trees on the part of the trunk or main branches facing the south-west, due, apparently, to exposure to the sun's rays. It is a question whether this damage occurs during the growing season or during winter or early spring. The term is more commonly used with reference to fruit-trees.

My own observation leads me to the opinion that the damage known as sun-scald may occur either during early spring or during summer, under certain conditions, but that the causes of the trouble differ at the two periods. In early spring it probably results from alternate freezing and thawing of the bark, especially when unseasonably warm weather, that excites the cambium cells to activity, is followed by freezing weather. At this season it is most common on young trees on which the bark has not yet become rough and the living bark has not been inclosed by dead cork layers. Often the trouble does not reach to the cambium, and hence does not immediately injure the tree further than to destroy the outer bark layers on the exposed part. In severe cases the bark of older trees may be entirely destroyed on the south-west exposure, so that it loosens from the wood and finally cracks open, exposing the wood to the attacks of injurious insects and fungi.

Sun-scald often occurs during summer on trees that have been recently transplanted or over-pruned, and sometimes during protracted drought on trees of certain species that have not been interfered with. In all these cases the cause is probably the same, namely, the transpiration current, which conveys the water from the soil to the leaves, is so much checked that the bark of the trunk becomes overheated, causing death of the cambium. The Soft Maple, Acer saccarinum, when properly treated, is entirely hardy at Madison, Wisconsin, but I have seen trunks of this tree several inches in diameter, the tops having been too severely cut back, with a patch of dead bark some inches wide, and extending from the ground to the lower branches on the part of the trunk facing the south-west. Trees of the Sugar Maple and White Birch, taken from the nursery and planted where their trunks are fully exposed to the sun's rays, are often destroyed by sun-scald the first or second season unless their trunks are shaded. The trouble is not immediately apparent, and is frequently not discovered until too late, for the foliage of the tree remains fresh. But examination of the bark facing the south-west a short distance above the ground reveals the fact that it is lifeless and that borers have gained entrance beneath it. The latter not only work beneath the injured bark, but eat into the cambium of the live part, thus often completely girdling the tree.

Fortunately, the preventive of sun-scald is very simple, and surrounding the bark with non-conducting material, or shading it in the exposed part, is all that is necessary. Several devices are in use for this purpose. A thin board is sometimes tacked to the trunk so as to face the south-west, or two boards nailed together in the form of an eaves-trough are sometimes tied to the trunk. A single narrow board sharpened like a stake and driven into the ground close to the trunk facing the south-west answers the purpose fairly well. A hay rope wound about the trunk from the ground to the lower branches is often used. A screen, made by weaving common house lath together with wire, has been much used in Wisconsin. This device is rather heavy for slender trees, and if put on so as to reach from the ground to the lower branches it sometimes heaves up in winter, and so does harm. Rye-straw set upright about the trunk and tied on with wool twine makes a protection that costs but one cent for each tree, and is readily applied to a crooked trunk and to the lower branches. Experience shows that this will last five years, which is usually as long as protection is needed. The codling moth and other injurious insects do not appear to harbor beneath this protection, as might be supposed. It has recently been proposed to cheapen this protector by sowing a few kernels of rye or oats about the trunk of the tree immediately after planting, a method that has not yet been tested to my knowledge.

Experiment Station, University of Wisconsin. *E. S. Goff.*

Foreign Correspondence.

London Letter.

LILY DISEASE.—Cultivators of Liliums have for some years been bothered by a disease which attacked the bulbs when dormant. This was not easily detected, especially in imported bulbs, but soon made its presence evident when the bulbs were planted in moist soil. Its ravages among Japanese Lilies have lately been most alarming, and I believe it has also got into the Lily-fields of Bermuda. Mr. Massee, of Kew, has investigated some diseased bulbs of L. speciosum and L. auratum, and the results are published in a recently issued number of the *Kew Bulletin*. The disease is first revealed by the discoloration and softening of the base of the bulb-scales, and this increases until finally the whole bulb becomes pulpy and brown. This is caused by a fungus which is described by Mr. Massee as a new species, namely, Rhizopus necans, and figures of it accompany his paper in the *Kew Bulletin*. He found that the fungus could not penetrate the unbroken tissues of the bulb-scales, but gained an entrance through wounds and especially through broken roots. He recommends a short immersion in a one per cent. solution of corrosive sublimate or of salicylic acid for diseased bulbs, neither of these substances having any injurious effect on them if not immersed longer than fifteen minutes. In addition to Lily-bulbs it readily attacks and destroys the bulbs of Narcissi. Mr. Massee recommends a change of soil for the cultivation of the bulbs, as the fields in which the Lilies are grown in Japan are probably saturated with the fungus. He also recommends the careful lifting of the bulbs and partial drying or "sweating" before they are packed for exportation. It might be well to dip all the bulbs in a solution of salicylic acid before packing them should there be any suspicion of the presence of the fungus. Another disease has lately attacked L. auratum in English gardens, destroying the strongest stems in a few days, usually when the flowers are about to open. It has been described as a kind of sun-stroke, and it has all the appearance of scalding.

Journal of the Royal Horticultural Society.—The August number of the *Journal of the Royal Horticultural Society* is of exceptional interest. It contains the list of the "Victoria Medallists" (I omitted the name of the learned Canon Ellacombe from the list which I wrote for Garden and Forest). A paper by Professor Marshall Ward on Microscopic Fungi and their Cultivation will be read with interest by all cultivators who hope for some cure for the many fatal diseases which now affect garden plants. Diseases of Plants (fungoid), by Mr. Massee, is of similar purport and value to the paper by Professor Marshall Ward. The Value of Artificial Manures is set forth in an excellent paper by Mr. J. J. Willis, probably the first authority in England on this question. A paper on the Storing and Preserving of Fruit, by one of our leading growers, Mr. J. Cheal, gives some useful advice to amateurs as to the best means of preserving and utilizing fruit, especially in times of good crops, when the tendency is to let it waste or sell it for nothing.

Orchid Pans.—Cultivators of Orchids differ as to the merits of block, teak-basket, pan or pot cultivation, and while some prefer to use baskets for almost everything, others declare that pots or pans are better. The fundamental principle to be borne in mind is that epiphytic Orchids cannot succeed in a compost which is not sweet and open or aërated, and therefore a pot or pan open only at the top and with a small hole in the bottom is not likely to prove safe except in certain cases and in careful hands. On the other hand, teak baskets are apt to allow the compost and roots to dry too quickly. I have recently seen some pans which combine the qualities of pot and basket; these are about half their diameter in depth, with an ordinary rim at the top, the bottom conical and perforated with large holes and the sides also perforated with round and elongated holes. These pans are made of red clay and they have holes for wires to suspend them. They are light and they may be stood on a stage or shelf as safely as if suspended. The advantage such pans have over wooden baskets is that they do not rot and afford a lodging place for fungoid and other pests. They do not require potsherds for drainage, and they do not allow the compost to dry too quickly; at the same time it is impossible for plants to become water-logged in them. I saw them in extensive use in the nursery of Messrs. F. Sander & Co., who have found them so admirably suited for Orchids, Nepenthes, etc., that they manufacture them largely, and now offer them for sale. They are almost as cheap as ordinary pans, the price of one six inches in diameter being twopence. They are therefore much cheaper than baskets; so cheap, in fact, that one need not hesitate to break them if necessary when removing the plants into larger pans.

Strawberries.—A trial of a select number of kinds of strawberries has been conducted at Chiswick during the last two years. The results are published in the *Journal of the Royal Horticultural Society*. Most of the stocks were planted in August, 1895, but some were planted a year later. It should be borne in mind that probably no fruit varies more than strawberries, both in different seasons and on different soils, and therefore sorts which may prove inferior in one season may be first-class the next. Still, there is not much difficulty in separating the good from the bad in a properly conducted trial extending over two years. The kinds which were voted best of fifty-six sorts tried are as follows. They were awarded first-class certificates. The name of the variety is followed by the raiser's name and the year when it received a certificate. Auguste Boisselot (1890): good crop the first year, much heavier the second, quality excellent; ripe June 11. Countess (1896): splendid crop first and second year, flavor delicious; a very fine variety with a wonderful aroma; ripe June 11. Edouard Lefort (Vilmorin, 1896): splendid cropper, flavor delicious; ripe June 11. Latest of All (Laxton, 1894): very heavy cropper, flavor better the second year; ripe June 15. Royal Sovereign (Laxton, 1892): a grand cropper, quality good; proved to be the hardiest and earliest variety; ripe June 4. Veitch's Perfection (Veitch, 1896): this variety has won a first place among the newer sorts; it was not received at Chiswick in time to be properly tested but it has proved a superb cropper, large and handsome in berry and of excellent flavor. Wonderful (Bunyard, 1897): good crop first year, very heavy second, quality excellent; ripe June 11. I had an opportunity of tasting and inspecting the varieties here mentioned and in my opinion the best of all, judging by the Chiswick test, was Countess.

Phloxes (P. decussata).—A large collection of the varieties of the popular garden Phlox has been formed at Kew during the last two or three years, numbering over one hundred named sorts. These have been obtained chiefly from the Continental nurserymen, who have paid special attention to the improvement of this Phlox, chief among whom is Monsieur Lemoine, of Nancy, who has bred most of the best sorts in cultivation. A selection of the best of them was made this year, and I give here the list in the hope that it will be helpful to any one wishful to grow a select few of this, one of the most ornamental of garden plants. At Kew, at any rate, the following are preferable to all others tried:—White: Berenice, Sylphide. White with dark eye: Pascal. Rose: Ouragon, John Forbes, Le Siecle, Grevin, Adonis, Moliere, Beranger. Rose-purple: Cœur de Lion, Champs Elysee, Roxelane. Lilac: Espoir, Eugene Danzanvilliers. Salmon-red or orange: Aurore, Roi des Roses, Regulus, Tom Welsh, Coquelicot, Toreador, General Chanzy. Blood-red: Coccinea. Bronze-violet: Solon. If I had to confine myself to three sorts, they would be Sylphide, Coquelicot and Tom Welsh. Phloxes like a rich soil, an open, sunny position, and plenty of water. In a dry border they lose their bottom leaves and become unsightly. They are easily multiplied from cuttings.

London. *W. Watson.*

The Chestnut in Bloom.

"The bloom is gone, and with the bloom go I."—*Thyrsis.*

THERE never was, nor, perhaps, ever may be a more perfect idea of the transition from early summer into midsummer than is conveyed by two stanzas of "Thyrsis," where the "red and white of May" passes into the deeper coloration of summer, with the "Chestnut-flowers strewn" between. In those perfect lines the English Chestnut is associated with plants of an earlier period of bloom than our native tree, but even closer our native Chestnut touches the high-water mark of the year. After Chestnut-tassels have fallen the time of preparation and expectation has passed, and not only has summer fully come, but autumnal flowers have begun with scouting parties of Asters and Golden-rod.

The past season has been noted for profusion of bloom of every sort, and the "high midsummer pomps" were ushered in by a perfect outburst of bloom from the Chestnuts. Hillside and valley woodlands were in places really illuminated by the cloud of pale golden tassels. One of the most beautiful specimens was a Chestnut found a short distance from Philadelphia, Pennsylvania, near the North Penn Railway (see figure 48 on page 373), and while not remarkably large, it was so perfect in form, so covered with bloom that one could not fail to be impressed by its unusual beauty. It stood far from a house in an open field, and was an ideal tree for the corner of a lawn, with down-drooping branches on one side, and on the other horizontal boughs that framed the landscape beyond. The economic uses of the Chestnut cannot be touched upon at present, but simply its æsthetic side. Every one who travels cannot fail to observe whole districts given up to a petty, trifling kind of planting, and it cannot be insisted upon too often that for broad and lasting effects, for dignity and increasing beauty, we must turn to the Tulip-tree and our Oaks, including with these, of course, the Chestnut. This tree fills such an important part in the landscapes of the Atlantic states, that it is only after passing beyond the Alleghanies one realizes how large

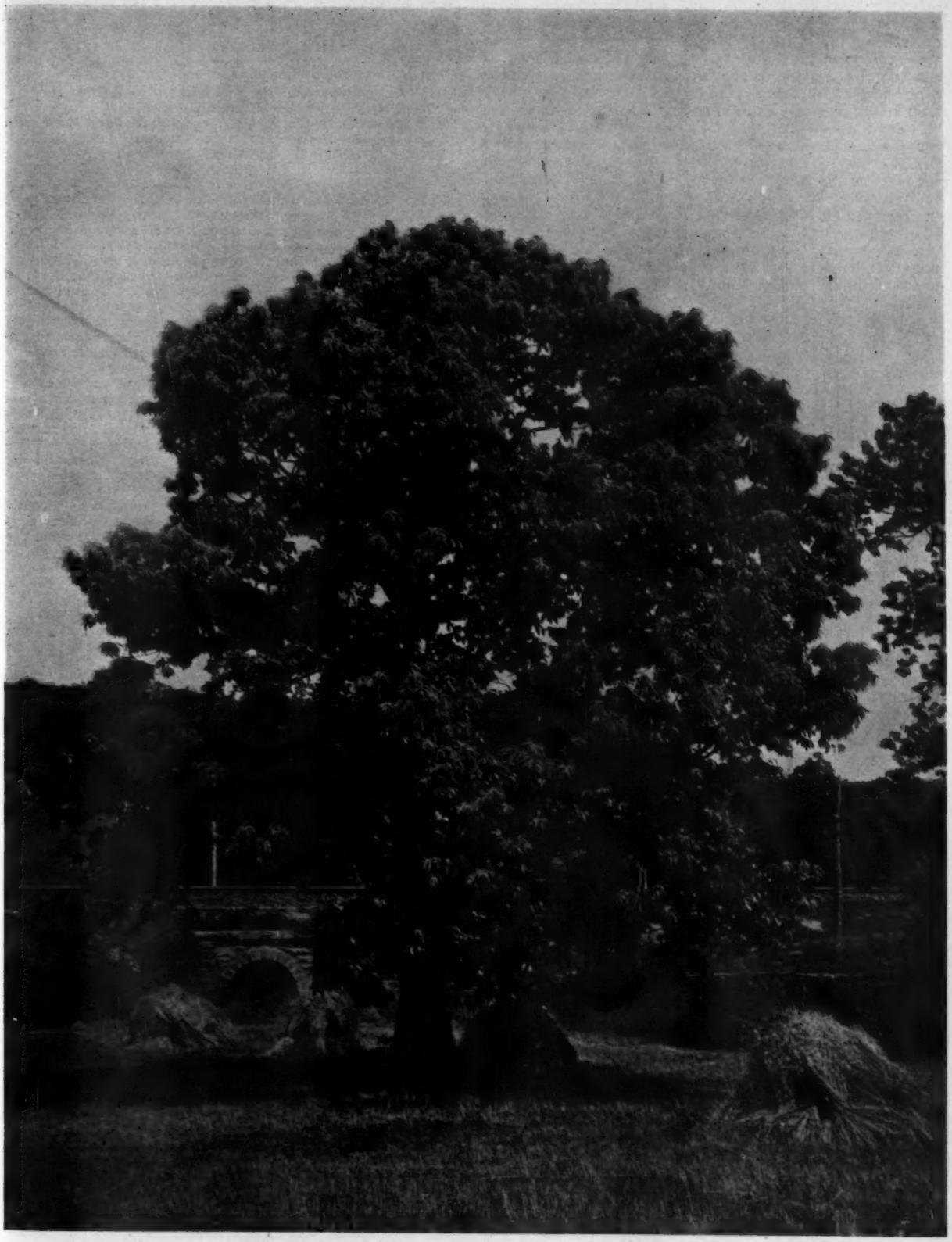

Fig. 48.—A Chestnut-tree near Philadelphia, Pennsylvania.—See page 372.

that part is. It is at home in the forest or beside the roadway; the smallest and plainest farm-house is dignified when sheltered by its overspread boughs, and the most beautiful lawn receives its crowning touch when the autumn sunshine slants through the green and gold of its leaves. The Chestnut disappears soon after one crosses the Alleghanies, and there is nothing the exile on some weary western farm longs for more than the Chestnuts on the hillside at home. An old mountaineer of central Pennsylvania, who has always been to me the embodiment of tree lore, in his recollection of the journey of his parents when returning from the then far west in Ohio, says that near Pittsburg the wind at night had an unusual sound, and on asking his mother what it was, she said, "It's the wind among the Chestnuts: we're nigh home, my boy."

It is this happiness of association that brings them so close to all who know them; no old-time myths of fatal arrows or sacrificial rites are connected with them, they are simply trees always known to us, and dear alike to the careless happiness of childhood, or quiet autumn rambles of later life.

Harrisburg, Pa. *M. L. Dock.*

Cultural Department.

The Flower Garden in September.

FALLING leaves and chilly nights now indicate the ending of the summer season, and although many warm days may still be looked for, frost may come almost any night. Everything susceptible of injury from slight frost should be placed under cover soon. Generally the first frost in this part of Massachusetts occurs about September 25th, but killing frosts do not come until the second week in October. Cuttings of tender plants, such as Strobilanthus Dyerianus, Coleus, Alternanthera, Acalypha, etc., should be got in without delay. We prefer to pot up a few old plants of Coleus and box off Alternantheras and place them on a shelf in a warm house. Geraniums we do not insert until early in October, when they are placed in well-drained boxes of sharp sand and stood on a light shelf in a cool house. Abutilons are useful as bedding plants; the flowering kinds are suitable for dotting in mixed borders, while those having ornamental leaves are effective in large beds. Souvenir de Bonn is one of the best. The new A. Savitzii is more heavily variegated, but with us proves a much more delicate grower. Cuttings of these varieties root readily at this season.

Cannas are now probably the most popular, as the most showy, of all flowering plants for ornamental gardening. Some of the older sorts, such as F. Vaughan, Madame Crozy, Alphonse Bouvier and Queen Charlotte, are still among the best for bedding purposes, but some of the newer sorts are promising. Italia, Austria and Burbank grow vigorously and are six to seven feet high and of proportionate spread. The flowers, however, lack the substance necessary to stand our hot midsummer suns and bleach out badly. At present, with cooler weather, they are superb, and more attractive than any other sorts. Probably under glass they would do well. Captain Drujon is a good yellow in the way of Florence Vaughan, the spots on the petals being lighter in color. Souvenir d'Antoine Crozy is good. Papa Canna, while not a specially attractive color, is a free bloomer. Beauté Poitévine is one of the best reds we have grown. Eldorado still holds its own as a yellow. Madame de Montefiore is also good. Charles Henderson, F. R. Pierson, Columbia, General de Miribel and Gloire de Montet are all superior, and should be in every collection. Cannas are excellent winter-blooming plants, and we pot up at least one of each variety. These are kept quite dry for about two months after watering, and when the Chrysanthemum season is past they are placed on a side bench in a house with a minimum temperature of fifty degrees.

The past summer has been specially favorable for tuberous Begonias, which have done better than ever before, the moist season suiting them. A border shaded from the afternoon sun, filled with fibrous-rooted Begonias in variety and Fuchsias and bordered with Rex Begonias, made one of the most pleasing displays we have had this season. More of these Begonias should be used; among flowering varieties, Haageana, several of the Semperflorens type, Nitida alba and rosea, Bismarck, etc., and among foliage sorts Thurstoni, Metallica, Alba picta and Manicata variegata. We plant out all the stock we have used for winter blooming and propagate young stock for another season's supply in pots. Fuchsias do not succeed in beds exposed to full sunlight all day, but when partially shaded and grown as short standards they are pleasing. In Great Britain enormous numbers of Fuchsias are used for bedding purposes, particularly in the London and other parks. Beds of Standards are charming there in a groundwork of some dwarf close-growing plant.

Perennial borders are now beginning to look somewhat dishevelled, but a variety of Helianthus and Asters, with a number of Phloxes and an assortment of annuals keep them from looking cheerless. Anemone Japonica and its white forms, Honorine Joubert and Whirlwind, are now in season; these are only hardy here if well protected by leaves. We grow a few in pots for use in the conservatory, where they fill in a blank until Cosmos and early Chrysantheums come into flower. Seedlings of various perennials sown during July are now in some cases of good size in nursery rows; more slowly germinating ones of smaller size will be pricked out in a cold frame and kept there over winter. Biennials such as Sweet Williams, Canterbury Bells, etc., need the ground stirred about them to keep growing well. The more tender sorts are planted in cold frames during October, while the hardier ones are set out in their places in the perennial borders. Dutch bulbs are now arriving, and as soon as frost cuts down plants now in the flower-beds these will be planted out, as they lose their vitality in paper bags.

Late Asters, which may not open out before they are caught by an early frost, if lifted with a good ball and planted in a cold frame will give some useful flowers for cutting. Summer-blooming Carnations are now at their best. It is a good plan to treat some of these in the same way as the Asters. The flowers will come cleaner and last better under glass, and the heavy night dews spot the flowers badly, particularly the white and crimson ones. Violets have appreciated the moist summer and look exceptionally well. The plants have recently been transferred to their winter quarters, as the heavy September dews, followed by hot days, seem to be specially favorable for the spread of the dreaded "spot."

Taunton, Mass. *W. N. Craig.*

Some Showy Annuals and Perennials.

A LARGE bed of Cleome spinosa is much admired for its large, upright racemes of showy rose-colored flowers. This exceptionally good annual plant can be recommended for large beds in open sunny positions, where the flower-clusters will keep on elongating and blossoming for two or three months. Our plants are raised from seeds sown in pots in the greenhouse early in April. When the seedlings are large enough they are potted off singly into small pots. About the end of May the plants are set out in beds in the garden, where they begin to blossom in the early part of July and continue in flower until frost destroys the plants. This showy plant is a native of the West Indies and tropical America. It has escaped from cultivation in some of the western states, and is also found on waste grounds southward. It is slightly more than three feet high and has prickly stems. The leaves, which are covered with clammy hairs, are of good size and are digitale, made up of five or seven leaflets. Seeds are produced plentifully, and young plants are easily obtained from them. There is a white-flowered form of this plant which is also desirable.

A near relative to Cleome spinosa is the native annual, Polanisia trachysperma. The plant grows about two feet in height, and is terminated with clusters of white flowers produced in leafy racemes. It has a long blossoming season and produces its flowers most plentifully during the hottest part of summer. It requires the same cultural treatment as Cleome.

Verbena venosa is a perennial plant of free-flowering habit, but as it is not quite hardy here it is grown annually from seed. It is more vigorous and not so liable to be destroyed by mildew as the hybrid kinds. Massed in an open, sunny position it is showy when in flower, with bright lilac or bluish blossoms. The branching plants are from one foot to eighteen inches high. Seeds are produced freely. This native of Brazil was introduced from there in 1830. V. Aubletia is a native plant not quite hardy here, but we find it well worth the trouble of raising from seed annually. Its showy, abundant reddish purple flowers make a good display during late summer and early fall.

The desirable native annual, Centaurea Americana, is seldom seen in gardens in this vicinity, although some of our seedsmen offer it in their lists. It is easily grown from seeds, and if sown in April the plants will blossom in July and August. The erect-growing plants have stout, well-clothed stems which

are terminated by large, showy rose-colored flower-heads measuring four inches in diameter. It is at home on the plains of Arkansas and Louisiana to Arizona.

Harvard Botanic Garden, Cambridge, Mass. *Robert Cameron.*

The Cultivation of Dutch Bulbs.

THE time for planting Dutch bulbs has now arrived. The first planting of Roman Hyacinths is already made; they are forced in large quantities by florists, and although rather common during the holiday season, these charming flowers are always favorites.

While Hyacinth culture is easy, there are some constitutional requirements which must be heeded. The Hyacinth is essentially a hardy plant, and cannot be forced quickly into bloom. Between the time of planting and the appearance of leaves there must be a root-forming period. The conditions of pot-culture differ from those in the open ground. In pots the bulb can barely be covered unless very large pots are used, and the consequence is, as many amateurs have found, that the roots in striking earthward become confined and force the bulbs out of the pots. Added pressure will keep them down, and after the pots have had a good watering the surface may be covered with two or three inches of sand or coal-ashes. Our plantings will be kept under the bench of a cold house, mostly for convenience. Cold frames answer as well, but must be well protected by mats and shutters during winter and have a banking of leaves or litter on the outside. We protect the cold frames well so that pots may be taken out at any time during the winter. If the Hyacinths are not wanted until spring a little freezing is beneficial rather than otherwise, providing the sun does not strike them. Roman Hyacinths naturally bloom earlier and force more readily than the show varieties, and therefore do not require so long a rooting period. The show varieties should not be unearthed until the flower-stem shows well among the leaves. In the meantime the plants will probably require one good watering, especially if the ground on which they are set is dry. A good indication in this respect is the drying out of the covering. My bulbs are so placed that I do not find it necessary to water them after potting time. Show varieties come on slowly and they are always better for a good start. Even though apparently drawn they quickly assume their natural green color on exposure to light. It is beneficial to stand the pots in a cool house for a few days before the plants are forced. A shorter and better proportioned flower-spike is obtained when the plants are forced slowly. Really no forcing is required if there is time to wait for the flowers, and they will come along well in a night temperature of forty-five degrees, Fahrenheit. These cultural remarks apply, with scarcely any variation, to all forced Dutch bulbs.

Wellesley, Mass. *T. D. Hatfield.*

Russellia juncea.—Though not one of the showiest of our greenhouse plants, this is certainly worthy of a place in every collection. It is specially serviceable where hanging plants are required, and owing to its pendulous habit it can only be shown to advantage in this way. The flowers, which are trumpet-shaped about one inch long and of a brilliant scarlet color, are freely produced nearly all the year through. The numerous long, rush-like, branching stems are clothed with small linear or lanceolate leaves. It is a plant of comparatively easy culture; it can be grown either in pots or baskets, and delights in a light, moderately enriched soil. A house where a night temperature of fifty-five to sixty degrees is maintained during the winter months will suit this plant well. The most convenient method of propagation is by cuttings made from the little branchlets taken off with a heel. These root readily in sand or sandy soil in a propagating-case with gentle bottom-heat.

Tarrytown, N. Y. *William Scott.*

Garden Plants in Autumn.—An effective subtropical bed in the flower garden on the estate of H. H. Hunnewell, Esq., is made up with several large plants of Eucalyptus globulus for the centre, and these grow twelve feet high. Grevillea robusta, Rubber-plants, Cannas with colored foliage, Acalyphas, Alocasias and Abutilons are massed about these, with a circle of Coleus Verschaffelti and Cineraria maritima for an edging. Desmodium penduliflorum makes a good autumn-flowering plant for the herbaceous or shrubbery border. By the graceful way its willowy branches fall away on all sides to the ground I should think it a first-rate plant to use for separate specimens on grassy slopes. Its distinctly Pea-like purplish flowers are borne on short racemes toward the ends of the branches, in the same way as in our garden Cytisus. Amaranthus caudatus is a good hardy annual, but, like many other excellent border plants, it would soon become a weed if allowed to spread. Persons seeing this plant for the first time are always impressed with its beauty. It is very effective in the subtropical border, where its purple plumes sometimes grow to the height of six feet.

Wellesley, Mass. *T. D. H.*

Correspondence.

Notes from the Ozark Fruit Regions.

Sir,—These notes were mostly made at the Olden Fruit Farm, in Howell County, Missouri, on the southern slope of a spur of the Ozark range and about twenty-five miles from the Arkansas line. But the methods advocated and largely practiced there, while advanced in some respects, are practically the same that obtained throughout the Ozark fruit region.

On so large a fruit farm, comprising 3,000 acres, every department of the work is on a correspondingly large scale. Thus, in the propagation of young stock, peach stones that have not been allowed to heat or sour are sown broadcast in October on the surface of ground that has been fertilized (after having been previously used for the same purpose) by the cultivation of Cow Peas—the so-called salvation of the Ozarks—for one year. The proportion of seed used is from three to four hundred bushels on a space sixty feet square—the seed being literally shoveled onto the ground—and then plowed under to a depth of from two to four inches. These sprout the following spring, coming up as thickly as grass. While the seedlings are very small they are transplanted into nursery rows three and one-half feet apart and about three inches apart in the rows. The following August they are budded, as close to the surface of the ground as it is possible to work, with any variety the grower chooses, and the Elberta is the usual choice, although thoughtful growers begin to doubt the wisdom of the universal cultivation of one variety, no matter how fine, the simultaneous marketing of the great Elberta crop of this year having seriously demoralized prices. The following spring the seedling tops are cut off and the bud nurtured through the season. The next spring, the root then being two years and the bud one year old, the trees are ready to set in orchards, and are considered better for the purpose than when older; indeed, any left after the next spring are rooted out and destroyed.

Peaches are always planted on the highest ground as a protection from late spring frosts, and the best results follow the use of ground that has been cleared of timber and brought under subjection by the cultivation of one or two crops of beans, potatoes, or even corn, though a low crop is considered preferable to corn. But if quick results are wished the stock is set at the rate of one hundred and sixty trees to the acre on new ground that has been cleared of native growth, the wood is burned, the clearing is grub-plowed, the worst of the stumps are picked off and also burned and the soil is harrowed. Corn is then grown in the orchard until the trees are three, and in some instances, four years old, after which, for the best results, the ground is cultivated each year until midsummer; but some growers omit this cultivation to the detriment of the crops. Peach orchards on such virgin soil need no fertilizing for at least ten years, but when new orchards are established on old, worn-out land Cow Peas are used to regenerate the soil, being sown in drills and cultivated. If the ground at any time shows great deterioration the crop is turned under, but usually simply growing and cultivating a crop of Cow Peas is accounted sufficient, and in most cases hogs are turned in to harvest the crop.

Peaches bear at three years and are profitable at from four to six years of age, and the oldest trees at Olden, now fourteen years old, still bear heavily. In a good peach year four-year-old trees will average two bushels each, but ordinarily one bushel is a fair average. The crop is less certain than that of Apples. There have now been three heavy crops in succession in Howell County, and in fourteen years there has been one instance of two successive years of crop failure.

No known case of either Yellows or Rosette has occurred in the Ozark region, and insects are less troublesome than in older orchard countries. Peaches were sprayed this year at Olden for the first time and with satisfactory results. The first spraying was done immediately after the fall of the bloom and was repeated three times at intervals of ten days. A preparation of arsenate of lead made and applied under the direction of Professor Stedman, of the Missouri Experiment Station, was used on every alternate five rows throughout a forty-acre orchard, which thoroughly disposed of the tent-

caterpillar and gouger and greatly lessened the ravages of the curculio, while it in no wise injured the foliage. The preparation is to have further trial before the formula is made public.

Brighton, Ill. *Fanny Copley Seavey.*

Fruit-trees in Arkansas.

To the Editor of Garden and Forest:

Sir,—As the summer season in north-western Arkansas is somewhat longer than in Massachusetts, a greater growth of the Burbank Plum is made here than that reported by your correspondent from Massachusetts on page 347.

In April, 1895, I set out a small-sized Burbank Plum, and it now measures ten feet in height. Last spring the branches were cut back to eight inches, and it has grown a little over four feet this season. All fruit-trees grow rapidly here. A small yearling Peach-tree transplanted in the spring of 1895, when the top was cut off at the root, is now fourteen feet high and ten inches in diameter. This year it was heavily loaded with fruit. An Elberta Peach-tree budded a year ago is eight feet high and is still growing. A Gibb Apricot has grown six feet this season. The entire top of an Early York Nectarine was broken off last winter; a sprout started near the ground, and now measures five inches in circumference and is five feet high. Several dwarf Pear-trees have grown five feet this year, and a Kieffer six feet.

Trees bear when very young, and it is no uncommon thing for a tree five years old to bear a bushel of apples, and for Peach-trees to bear moderately when two years old.

Decatur, Ark. *A. R. Plank.*

The Marsh at Rose Brake.

To the Editor of Garden and Forest:

Sir,—September, in this part of the country, is usually a dry month. The roads are hot and dusty, the garden has a discouraged air, the leaves are limp and withered, and the flowers hang droopingly from their stalks. The only fresh and verdant spots are the banks of streams and the moist places of the farm where the springs well-up from the limestone rocks underground.

One of the attractions of Rose Brake is its acres of unredeemed marshy ground, which we have made a present to Nature, and over which she holds undisputed sway. Here beauty revels in these September days in a riot of color and bold and picturesque effects. Through beds of Mint and Moss and many gay blossoms now in their prime, winds a stream which is fed by many springs. This is the wild-flower garden that far outrivals our poor attempts at cultivated borders on dry and rocky hillsides, which are only successful in spring and early summer. It is to the marsh that we go with shears and baskets now to garner some of this lavish harvest of bloom for the decoration of home and little church.

Various are the surprises here. In one place the stream runs between beds of a low-growing showy yellow flower, the common Bidens chrysanthemoides, first cousin of the hateful Spanish Needles, but which makes here a beautiful picture of dewy freshness by its lavish display of bright golden blossoms set in greenest grass. Then there are large patches of the crushed-raspberry-colored Joe-Pye Weed, with fringes of a white species of Eupatorium to give variety. In another place a rank growth of Golden-rod and Yellow Cone-flowers is mingled with the reddish purple of Iron Weed and Marsh Thistles six feet in height, of the same reddish hue. Here are flowers, not in small, primly-ordered borders, but in masses of bright colors acres in extent, harmoniously arranged and blended by the master-hand of Nature. Here are no conflicting hues, no stiff monstrosities, no double Sunflowers and Dahlias, and China Asters and screaming Zinnias whose colors set one's teeth on edge, all in a meaningless jumble, without form and void of beauty, such as one sees in the gardens hereabouts. The effect of our bright marsh garden is toned down by its quiet setting in wild shrubbery, which includes seven species of Willow, and Wild Roses, Viburnums, Thorns, Sycamores and many other plants. Here, too, the Bittersweet and Honeysuckle escaped from cultivation, and the native wild Grapes festoon at will the growth on the banks of the stream, and huge rocks elbowing each other form gloomy recesses where Ferns and Mosses love to hide and birds to build their nests. Tall, rank Sedges and Grasses gone to seed mingle effectively with the brighter coloring of the flowers.

In one place I noticed a patch several yards in circumference of Cuphea viscosissima, an insignificant little plant as usually seen in dry soils, but here in the rich muck and blooming lavishly, it makes an effective patch of a rather pleasing light magenta color, contrasting not unfavorably with some neighboring clumps of Coreopsis and Chrysopsis Mariana. In some places the Jewel-weed is unusually rank and tall and free-flowering, and large clumps of it, studded with bright orange-colored blossoms, are framed in a setting of blue Ageratum.

In a damp corner of a pasture-field we find a thriving colony of the lovely blue Lobelia syphilitica. No other flowers are near by to mar the effect of the bright blossoms growing out of the fresh Mint and Grass, and it is a delight to sit upon a mossy stone and revel in the blue and green surrounding one in perfect accord with the clear blue of the sky and the tender green of the Honey Locust trees that overhang the spot. From this point of vantage we survey the extent of the marsh and take in all its beauty and are glad.

Rose Brake, W. Va. *Danske Dandridge.*

Native Plants for Ornamental Planting.

To the Editor of Garden and Forest:

Sir,—Your recent editorials recommending the use of native local plants for the ornamentation of small country places ought to open many eyes to the variety of the examples offered by Nature's products, not merely in the meadow and by the brookside, but even along the high road, where conditions of growth are usually less favorable. For example, I noticed recently by a country roadside in this part of southern New York, an "arrangement" of Nature's making which might well be imitated by a planter of taste, and which could not easily be rivaled by any created with exotic garden shrubs and creepers.

Between a sloping hillside and the road, sweeping downward to a border of Grass just as one might desire it to do in ornamental grounds, ran a long narrow clump of Sumachs. Their handsome dark red panicles were at their best. The deep green of their foliage was varied by the beautifully lobed leaves of our most beautiful wild Vine, Vitis æstivalis, while its stems were hidden from view. And over all, not as a thick covering, but in sparse, graceful tendrils, ran lengths of the Virgin's Bower, bearing charming clusters of starry white flowers. This was only one of the striking instances of beautiful "arrangements" casually produced with native plants which I noticed in the course of a single afternoon's drive; but it is enough to show that no one need depend for variety of effect, any more than for beauty, upon the resources of the gardener. Perhaps in two or three years this particular bit of Nature's planting will have lost its beauty. Very likely the Vine and the Clematis will have strangled the Sumachs—I mean, will have overrun them with heavy masses of their own foliage so that the artistic-seeming arrangement of to-day will become a somewhat formless tangle in which the individual charm of the component parts will be lost. But this is just where man has the advantage of Nature. In the pleasure-ground discreet pruning or uprooting might keep such an arrangement perfect for many years, while Nature, bent upon growing as many plants as she can as fast as she can, cannot pause to preserve special effects of peculiar beauty.

Tuxedo Park, N. Y. *M. G. Van Rensselaer.*

The Jewel-weed for Cutting.

To the Editor of Garden and Forest:

Sir,—In your issue of Garden and Forest for August 18th, in the article on the August wild flowers, it is said that the lovely Jewel-weeds, Impatiens pallida and I. fulva, are useless for house decoration, and this is almost true. However, after repeatedly hurrying it into the house and into water, and failing to save them, I carried the water to the flower. By gathering the graceful sprays early in the day or very late, or on a cloudy day, and by cutting the stems off immediately a second time under the water, I have succeeded in having fresh Jewel-weed in the house.

Stowe, Vt. *Ellen E. Learned.*

Recent Publications.

Familiar Features of the Roadside: The Flowers, Shrubs, Birds and Insects. By F. Schuyler Mathews. With one hundred and sixty drawings by the author, and many of the songs of our common birds and insects. New York, D. Appleton and Co. 1897.

Books about Nature in her more familiar moods, as distinct from books of travel and descriptions of scenery, have

in recent years become more and more numerous. And the wide welcome accorded them proves a growing interest in our public as regards a knowledge of Nature's products, animate and inanimate. The two classes into which such books naturally fall—the æsthetic and the scientific—seem to be equally popular, while the more exceptional works which unite real information of a scientific kind with a really adequate and personal interpretation of Nature's beauty and charm, are deservedly the most warmly welcomed of all.

Of course this evident demand for books which enlarge the perceptions, broaden the knowledge, and deepen the feelings of the average reader who is neither a trained artist nor a professed student of science, has brought forth many works which fall below the level of real utility. And, unfortunately, the book now under review must be ranked among these. It contains many scientific facts of more or less value and interest, and many expressions of pleasure in natural beauty. But the facts are so ill-arranged and for the most part so inadequately explained, that the reader will hardly close the book feeling that his knowledge is much enlarged. And the endeavor to interpret beauty seems to have been almost wholly futile and, in certain ways, actually misleading.

One great fault in this book is that it lacks consistency of plan. If it showed the familiar features, animate and inanimate, of our roadsides, in any systematic way whatever it would have a genuine claim to praise. But it does not confine itself to any special locality nor, on the other hand, does it draw comparisons between different localities. Various parts of our eastern states are referred to on various pages, but no clear picture of any is presented, and most of the geographical references will leave the reader in doubt whether or no the plant in question is narrowly confined to the indicated district, environment, or spot. Again, while some attempt is made to follow the procession of the seasons, it is not systematically carried out. After a chapter on Early Wild Flowers and one on Early Flowering Shrubs we are not told about those of the following weeks—we are jumped into two chapters on Shrubs Belonging to the Rose Family; and the subsequent ones are as heterogeneously arranged. Moreover, heterogeneous material is intruded into some of the chapters in a way which must perplex any reader devoid of botanical knowledge. For example, in one of the chapters on the Rose Family a paragraph about plants which furnish food for birds is inserted, and no indication is given that they do not belong to the Rose Family except by the mention of their scientific names, and this will not make the fact plain to an unlearned reader.

It should be understood that this is distinctly a book for beginners, not for those who have made even the first steps in botanical knowledge. Therefore such faults and failings as we have pointed out seem to us radical. The only way to show a beginner that nature is interesting, and that the study of its products means something more than a memorizing of Latin names, is to group facts in some sort of logical sequence. We do not say that Mr. Mathews has not attempted this in the volume before us, but he has certainly not attained it. Nor are his facts always as clearly and accurately put as they should be in an elementary work. To say that Cornus florida "bears a large flower with four notched, petal-like, showy white leaflets set around the tiny greenish florets," cannot convey any definite idea to an uninstructed reader. It seems extraordinary that if it was felt needful to indicate that this "flower" is unlike ordinary flowers, it did not seem essential to explain its structure correctly, especially as such an explanation might have been made perfectly clear and extremely interesting to the least patient eye. Again, if it was worth while to mention that the Indian Pipe is "odd" it was surely worth while to explain its oddity better than by saying it has a "frail, fleshy, single flower." And defects of a more fundamental kind are indicated by the fact that while Mr. Mathews devotes a chapter to Shrubs and Flowers Belonging to the Heath Family he gives no slightest indication of why these plants are grouped together in one family. Not interest but discouragement, not a belief in the reasonableness but a strong suspicion of the unmotived wilfulness of scientific classifications, must be awakened in the novice who is conducted from the Rhododendron and Mountain Laurel to the Pipsissewa and the Indian Pipe without any hint in regard to the basis of the classification which brackets them together.

Mr. Mathews's treatment of birds and insects may be left for appraisement in other pages than these. But here a word must be said about his point of view as regards natural beauty. His remarks upon this subject are most often in praise of a phase of art which he calls "impressionism" and of the high intelligence of the "impressionist." These terms are not explained. It is not even implied that impressionism is a modern phase of art which, like all others, may be attempted by foolish or feeble as well as by capable artists. We are told, as the concluding lesson of the book that "The impressionist has in his possession the key to Nature's mysteries of color," and on another page that "the commonest weed by the roadside becomes one of the most beautiful things in the world when the strength of its color is portrayed on the impressionist's canvas." Surely, there were kings before Agamemnon; and as surely every one with a paint-box who calls himself Agamemnon does not deserve the name. Of course Mr. Mathews knows this, but in a book for beginners it is well to make such things plain; and it is also well to give some interpretation of terms not generally understood, and not very concordantly defined even by those who think they understand them. It is altogether a matter of speculation what the author understands by the word æsthetic as used in a sentence, describing the Joe-Pye Weed, which runs: "This is rather an aspiring weed, which furnishes the lowland landscape in summer with the most consummately æsthetic pink tone which it is possible to imagine. (The Joe-Pye Weed, we may note, is more aspiring than the limiting word "rather" would lead one to suspect, and it grows in other localities as well as in the lowlands.) Again, we are told that "the splendid color of the October landscape is æsthetic" while "that of snakes, butterflies, beetles, birds, and flowers is beautiful only as far as it is brilliant, or pure, or variegated." Such statements as this must confuse the beginner in the art of appreciating beauty quite as much as Mr. Mathews's lack of clearness in scientific definition must confuse him with regard to the science of classification. Nor can much that is inspiring be gathered from the descriptions of an author who permits himself to speak of the "even yellow" of the Sugar Maple in autumn and the "sober scarlet" of the Red Maple; who mentions several times the "neutral gray-buff of the road," not noting that roads differ almost as much in color as green leaves; who has such curious ideas in regard to what may be called the terminology of sizes that he describes the "tiny" blossoms of the Yellow Hop Clover as "scarcely larger than one's thumb nail"; who says that the color of the Rhodora is "too near the unpopular magenta to make it a favorite with anybody but an enthusiastic poet," and on another page declares that the immature fruit-clusters of the Dwarf Blueberry "are of the most beautiful æsthetic hues: green, magenta, pink, purple and violet." The mention of the Rhodora, by the way, offers an opportunity to illustrate what we meant by saying that Mr. Mathews's geographical indications may easily mislead. He remarks that the Rhodora "is readily found in the vicinity of Concord and Lexington, Massachusetts," and that "it is also seen in cultivation in the Arnold Arboretum near Boston, and the Harvard Botanic Garden, Cambridge." A beginner might well be discouraged by these words from looking for the Rhodora anywhere else; and indications of this seemingly exclusive kind are very frequent in Mr. Mathews's book.

Some of his little drawings of plants are good; others,

like the picture of an Hepatica, do not give a true idea of the plant. His drawings of birds lack character and delicacy; and the many landscape views are far below the average to which the eye of the public has grown accustomed in the pages of our illustrated magazines.

Notes.

Miss Maria Audubon is translating from the French for publication the hitherto unpublished journals of her distinguished grandfather.

Among seasonable vegetables are cranberry-beans, the large rose-colored pods enclosing fleshy white beans splashed with pink. These sell for forty cents a half-peck. Tomatoes of perfect form and color and of high quality with respect to texture and flavor, are coming from the vicinity of Chicago. These are the choicest offering of this vegetable in the New York markets now, and bring fifteen cents a quart.

Limes from the West Indies are among select fruits now in season, and occasionally a bunch of red bananas is seen; the latter cost sixty cents a dozen, a price considerably in advance of that asked for the best yellow bananas. Owing to the effect of the war in Cuba on trade with that island none of this red fruit has been seen in our markets during the past year, and a cargo of many thousand bunches of yellow bananas from ports in Central America may include only one or two bunches of the red fruit. Among other imported fruits are Alligator pears, from Venezuela; these sell for twenty-five cents each. The large, smooth, oval fruits known as Spanish melons in the trade and which come from Italy, find a limited demand at fifty cents apiece.

In an account of the present condition of the artificial silk industry in the *Revue Industrielle* it is stated that patents have quite recently been taken out by Dr. Lehner, of Switzerland, for the manufacture of an artificial silk made with wood-cellulose, or, more simply, with sawdust. This product is, however, highly inflammable and more costly than real silk, so that there is opportunity for improvement in the new industry in the way of economy and safety. Among other substitutes for genuine silk is mentioned a cotton fibre treated so as to have the lustre of silk by a process patented by Monsieur Oswald Seyfert. This Seyfert cotton is said to be on the market in competition with other artificial silks, and at a fairly reasonable price.

Hardy Bamboos are beautiful in the Royal Gardens at Kew at this time, and every year seems to reveal new attractions in habit, sheath, curve of culm, etc. In writing of these Bamboos, Mr. Watson says they do not flower, or if they do so much the worse for them, but they have variety enough to be of perennial interest without flowers. They have to be watched to prevent their outrunning the space allotted to them, but in almost every one of the numerous species grown at Kew there is a vigor and persistency of growth shown which suggests much usefulness in the large garden and park, particularly in the neighborhood of water. They are not known yet, and those who know least about them are apt to decry their merits. But they are essentially plants for general use. Two new species have lately been added by Mr. Freeman-Mitford, namely, Arundinaria metallica, which is intermediate between A. Veitchii and A. humilis, and Phyllostachys fulva, a near ally of P. nigra. These are both from Japan.

In a recent article in which reference is made to the influence of forests on farming, the *Boston Transcript* says that soil, moisture and heat are the three servants of the farmer. The soil he can regulate by culture and fertilizers, but moisture and heat seem out of his control. These are not out of the control of the woods, however, and the farmer by judicious management of his tree-lot can bend them to his ends. He can prevent or temper the effects of atmospheric changes, he can avoid the disasters of excessive rainfall, and he can manage the water to his own benefit. It is explained that the snows of winter are conserved by the shade of the trees and do not rush away at the earliest moment of sunshine to swell the spring freshets; the loose soil of the woods, not hardened by the impact of the raindrops, holds the water and lets it percolate to the springs below; the tree-covered area catches more of the snow, and the shaded surface does not give up its moisture in evaporation; there is more water there and means are present to prevent its waste so that the subsoil distribution is better and stronger, and it is the subsoil waters that are the farmer's standby in case of need.

The first Japanese persimmons of this season, from Florida, are now seen in choice collections of fruit, and cost fifty cents a dozen. Grape-fruits are another novelty just received from the same state, and sell for $2.00 a dozen. Bartlett pears of the largest size are showy yet, although their rich yellow color lacks the bright marking of the smaller fruits seen earlier in the season. These sell for from sixty to seventy-five cents a dozen in the fancy-fruit stores, together with selected specimens of Duchesse d'Angouleme. Seckel pears, from the Hudson River district, are in demand for their rich, spicy flavor, and the best cost twenty cents a dozen. Even the most ordinary fruits are arranged with taste and displayed to the best advantage, and three-pound baskets of Concord grapes are made up of short sections of the vine with two or three bunches of the fruit attached. Crawford peaches of immense size are seen in the best markets, which have been cut from the tree with a bit of the branch and a leaf or two, and a basket holding twenty-four of these handsome fruits sells for $1.25. The first Cornichon grapes, from California, sell for fifty cents in five-pound packages. It is surprising to see huckleberries shown so late in autumn, and after cranberries are regularly in season.

Stockbridge, Massachusetts, claims to have been the pioneer in the organization of the Village Improvement Societies now existing in many states, and the work of the Stockbridge Society, which is called the Laurel Hill Association, has steadily broadened out. It now has district committees to care for the different sections of the town, and also special committees charged with the supervision and improvement of parks, squares, street sprinkling, street lights, the removal of snow, the care of cemeteries and other special matters. One of its members has recently suggested a combination between all similar societies in Berkshire County, or, if possible, in a still wider area, to work for rural improvements and for the preservation for public enjoyment of places of great natural beauty or historic interest. Of course, efforts toward the latter end have already been made in many localities, but the combination of small local bodies would further this good movement and awaken popular interest in it. Such coöperation would tend to effect, along deserted farm fronts in the country, tree-planting, weed-cutting and the making and preserving of openings through brush or trees for a passing sight of beautiful scenery. As has been said by one of the members, it would mean good roads everywhere, tidiness in the villages, the doing away with flaming circus posters and patent medicine advertisements. After a time no farmer would build his unsightly barns across the road from his house, or put his cattle-shed between his windows and a beautiful landscape. Ugliness and neglect would be looked after between the towns, a common recreation-ground would be established and a reservation of the most wild and beautiful spots would be effected.

Concerning local adaptability of varieties to certain soils and climatic conditions, T. V. Munson, in a recent number of *The Rural New-Yorker*, states that adaptability or non-adaptability applies more to the species than to cultivated varieties. As an example Mr. Munson cites the fact that not one or a few varieties of the Muscadine species of Grapes, but all the vines of this species, succeed well in good soils in the south, but never in the north. All Mustang Grapes do well in almost all soils and situations in the dry south-west, but fail entirely in the cold, damp north-east; no other species is so generally successful in Texas. But on all upland, sandy soils, known as Post-Oak lands, the Post-Oak Grape, Vitis Lincecumii, succeeds perfectly if in well-drained soil, but fails in seepy and bottom lands. Vinifera varieties almost always suffer in all the southern states east of the one-hundredth meridian with mildew and rot in foliage and fruit, as well as with phylloxera at the roots, showing clearly that the species is a native of very arid regions, where these diseases do not exist, and agreeing with the accredited habitat of the species as being in the arid regions of Persia and other central southern Asiatic regions. The native Grapes of Arizona invariably suffer severely from mildew and rot when moved into the Mississippi valley. In black, waxy, very limy lands in Texas the Labrusca class of Grapes almost always fail, and do poorly anywhere in the interior south-west; their inability to endure appears to be in their having masses of fine surface roots, and no ability to push deeply into the soil, as do the southern species. In New York varieties of no other species succeed better than those of Labrusca. Examples of local adaptability are given also of other fruits and of vegetables and trees, and it has been Mr. Munson's experience that if species which do best in a peculiar soil and climate are taken to a different locality and new varieties are grown there, these new varieties will do better in the climate and soil where their parents came from.